

Application No.: 09/896,655Case No.: 56719US002**Remarks**

Claims 12-45 are pending. Claims 23-34 have been withdrawn from consideration. Claims 12, 18, and 35 are amended. Claims 13 and 19-21 have been canceled. Claims 36-45 are allowed.

Claims 12 and 35 have been amended to require that the polymeric adhesive component comprise a semicrystalline thermoplastic polymer which comprises at least one polyether chain segment and at least one polyamide chain segment. Support for these amendments can be found at, e.g., original claims 12, 35, 13 and 21; page 5, line 24 – page 6, line 4; page 8, lines 8-19; and page 10, lines 25-30.) Claims 12 and 35 were also amended to remove the requirement that the organophilic clay comprise the reaction product of a clay and a quaternary ammonium compound. Support for these amendments can be found in the claims as originally filed.

Claim 18 was amended to depend from claim 12 rather than now-canceled claim 13. Support for this amendment can be found in claims 12, 13 and 18, as originally filed.

Please cancel claims 13, and 19-21.

§ 103 Rejections

Claims 12-14, 16-19, 23, 24, and 35 stand rejected under 35 USC § 103(a) as purportedly being unpatentable over Christian (US 6,060,230) and Pinnavaia (US 5,801,216).

As amended, independent claims 12 and 35 provide an electrically conductive adhesive composition comprising (a) a polymeric adhesive component comprising a semicrystalline thermoplastic polymer which comprises at least one polyether chain segment and at least one polyamide chain segment; (b) an electrically conductive filler incorporated into the adhesive component; and (c) a clay component incorporated into the adhesive component, said clay component comprising an organophilic clay. As amended, claims 12 and 35 include the limitations of claim 21 (a thermoplastic polymer which comprises at least one polyether chain segment and at least one polyamide chain segment).

Application No.: 09/896,655Case No.: 56719US002

Applicants note that claim 21 was not rejected under 35 USC § 103(a) as being unpatentable over Christian and Pinnavaia. Thus, Applicants respectfully submit that claims 12 and 35, as amended, are patentable over Christian and Pinnavaia.

In summary, the proposed combination of Christian and Pinnavaia fails to describe, teach, or suggest all of the elements of claims 12 and 35, as amended. Thus, for at least these reasons, the rejection of claims 12 and 35 under 35 USC § 103(a) as being unpatentable over Christian and Pinnavaia has been overcome and should be withdrawn.

Claim 13 has been canceled, rendering the rejection of this claim moot.

Claims 14, 16-19, 23, and 24, each depend, directly or indirectly, from claim 12 and add patentable features thereto. Claim 12 is patentable for at least the reasons stated above, thus claims 14, 16-19, 23, and 24 are likewise patentable.

In summary, the rejection of claims 12-14, 16-19, 23, and 24 and 35 under 35 USC § 103(a) as purportedly being unpatentable over Christian and Pinnavaia has been overcome and should be withdrawn.

Claims 13 and 20-22 stand rejected under 35 USC § 103(a) as purportedly being unpatentable over Christian (US 6,060,230) and Pinnavaia (US 5,801,216) as applied to claims 12-14, 16-19, 23, 24, and 35 above, and further in view of Hansen (US 5,672,400).

Claims 13, 20 and 21 have been canceled rendering the rejection of these claims moot. Applicants note that the limitations of rejected claim 21 have been incorporated into independent claims 12 and 35. Therefore, the rejection under 35 USC § 103(a) based on Christian and Pinnavaia in view of Hansen will be addressed with respect to these claims, as well as claim 22.

Christian relates generally to multilayer imaging elements and in particular, to multilayer imaging elements containing a support, at least one image-forming layer, at least one transparent electrically-conductive layer, and a transparent magnetic recording layer. The electrically conductive layer contains polymer-intercalated or exfoliated smectite clay particles dispersed in a film-forming binder or mixture of film forming binders. (Col. 1, lines 9-22.)

Christian provides a list of polymeric binders that are said to be capable of sufficiently intercalating inside or exfoliating smectite clay particles. This list incorporates others disclosed in co-pending applications and patents, including extensive lists of polymeric binders. Christian

Application No.: 09/896,655Case No.: 56719US002

also provides a list of polymeric film-forming binders purported to be useful in conductive layers of the invention. (Col. 10, lines 48-67.)

The Patent Office relied on Pinnavaia for its purported teaching of intercalating a clay component with a quaternary clay component. (Office Action mailed May 10, 2004 (hereinafter "OA 10May04"), ¶ 4.) Pinnavaia describes clay intercalated or exfoliated with a cured thermoset epoxy compound. (Col. 3, lines 27-29. See also col. 4, lines 15-26.)

The Patent Office acknowledges that these references fail to describe all elements of the present invention, more specifically that they lack the presence of tackifier and semi-crystalline polymer in electro conductive adhesives as well as the type of specific polyamide (i.e., a polyether-polyamide block copolymer). (See OA 10May04, ¶ 5.)

According to the Patent Office, Hanson discloses a composition for electro conductive adhesive containing a semi-crystalline polymer and tackifier. The Patent Office also asserts that in Example 1 of Hansen the polymeric component is polyether-polyamide block copolymer and the tackifier is phenolic. (OA 10May04, ¶ 5.)

The Patent Office further asserts that the use of tackifiers and specific polymers in compositions that require adhesive properties vary with the type of the substrates such composition should adhere to. (OA 10May04, ¶ 5, emphasis added.) The Patent Office concludes that, "[i]n the light of the above disclosure, having read and understood the two prior art documents at hand it would have been obvious to one having ordinary skill in the art to combine the prior [art] of record and thereby arrive at the present invention. (OA 10May04, ¶ 5.) The Patent Office goes on to assert that one should change the composition and properties of the references, alleging that one of ordinary skill in the art would know how to modify adhesive property of the composition by changing the polymer and tackifier." (OA 10May04, ¶ 5.)

Applicants respectfully traverse. The mere fact that references can be combined does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination (See, *In re Mills*, 916 F.2d 690, 16 USPQ2d 1430 (Fed Cir. 1990)).

First, the Patent Office has failed to show how Christian describes, teaches, or suggests an adhesive. Christian states that "an objective of this invention is to provide a conductive layer which exhibits improved adhesion ... when overcoated with a transparent magnetic layer relative

Application No.: 09/896,655Case No.: 567191JS002

to conductive layers of prior art.” (Col. 5, lines 59-63. See also OA 10May04, ¶ 4.) Applicants respectfully submit that this statement alone is an insufficient basis from which to conclude that Christian describes, teaches, or suggests an adhesive. For example, one typically describes a coating (e.g., paint) with increased adhesion to a substrate (e.g., wood), yet one of ordinary skill in the art certainly would not describe either the coating or the substrate as an adhesive.

Second, the clay-containing layer of Christian is described as the electrically conducting layer of an imaging element. This layer is positioned between a support and a transparent magnetic recording layer. (Col. 1, lines 9-22). Applicants respectfully submit that the Patent Office has failed to show how Christian describes, teaches, or suggests that such a layer would need adhesive properties such as creep resistance, high temperature performance, fracture toughness, and tack, as suggested by the Patent Office as a motivation to combine the references. (OA 10May04, ¶ 5.)

Third, as acknowledged by the Patent Office, the “[u]se of tackifiers and specific polymers in composition[s] that require adhesive properties vary with the type of the substrates such compositions should adhere to.” (OA 10May04; ¶ 5.) Assuming *arguendo* that the electrically conducting layer of Christian requires “adhesive properties,” Applicants respectfully submit that the Patent Office has failed to show how the references describe, teach, or suggest that the materials of Hansen, which are used in microelectronic assemblies (col. 3, lines 54-57), would be desirable, or even suitable, for the electrically conducting layer of the imaging element of Christian, and the substrates to which the electrically conducting layer must bond.

Fourth, assuming *arguendo* that the materials of Hansen were suitable for the electrically conductive layer of Christian, the Patent Office has failed to show how the references would motivate one of ordinary skill in the art to (i) ignore the extensive lists of purportedly suitable polymeric materials present by Christian and (ii) ignore the references discussed therein, and (iii) instead substitute the selected polyether-polyamide block copolymer of Hansen. Applicants respectfully submit that the Patent Office has impermissibly used the Applicants’ specification with the benefit of hindsight as motivation to take these steps in selectively modifying Christian. (See MPEP § 2141.)

Application No.: 09/896,655Case No.: 56719US002

In summary, the Patent Office has failed to provide the requisite motivation to combine, and reasonable expectation of success of combining the references; thus, the Patent Office has failed to establish a *prima facie* case of obviousness. (See MPEP § 2143.) For at least these reasons, claims 12 and 35, which incorporate the limitations of claims 13 and 21, are patentable over Christian and Pinnavaia as applied to claims 12-14, 16-19, 23, 24, and 35 above, and further in view of Hansen.

Claim 22 depends from claim 12 and adds patentable features thereto. Claim 12 is patentable over Christian and Pinnavaia in view of Hansen for at least the reasons discussed above, thus claim 22 is likewise patentable. Thus, the rejection of claim 22 under 35 USC § 103(a) as purportedly being unpatentable over Christian (US 6,060,230) and Pinnavaia (US 5,801,216) as applied to claims 12-14, 16-19, 23, 24, and 35 above, and further in view of Hansen (US 5,672,400) has been overcome and should be withdrawn.

Similarly, claims 14, 16-19, 23 and 24 each depends, directly or indirectly from claim 12 and adds patentable features thereto. Claim 12 is patentable over Christian and Pinnavaia in view of Hansen for at least the reasons discussed above, thus claims 14, 16-19, 23 and 24 are likewise patentable.

Applicants gratefully acknowledge the Examiner's statement that Claim 15 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants respectfully defer amending claim 15 pending a resolution of the patentability of the remaining claims.

Applicants gratefully acknowledge the Examiner's statement that Claims 36-45 are allowed.

In view of the above, it is submitted that the application is in condition for allowance. Reconsideration of the application is requested.

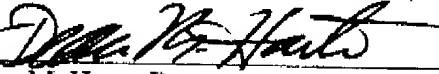
Application No.: 09/896,655Case No.: 56719US002

Allowance of claims 12, 14-19, 22-24, and 35, as amended, along with already-allowed claims 36-45, at an early date is solicited.

Respectfully submitted,

10-Aug-2004

Date

By: 

Dean M. Harts, Reg. No.: 47,634
Telephone No.: (651) 737-2325

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833

DMH/TMS/spg